

CLAIMS:

1. A method for modifying a porous film mainly having Si-O bonds, wherein a thermal treatment is conducted without using a metal catalyst by bringing an organic silicon compound including one or more Si-X-Si bond unit (wherein X represents O, NR, C_nH_{2n} , or C_6H_4 ; R represents C_mH_{2m+1} or C_6H_5 ; m is an integer between 1 and 6; and n is 1 or 2) and two or more Si-A bond units (wherein A represents H, OH, OC_eH_{2e+1} or a halogen atom and may be the same or different within a single molecule; and e is an integer between 1 and 6) into contact with the porous film.
2. The method for modifying a porous film according to claim 1, wherein the thermal treatment is conducted at a temperature of from 100 to 600 °C.
3. The method for modifying a porous film according to claim 1 or 2, wherein the porous film before the treatment is a film having mesopores.
4. The method for modifying a porous film according to claim 3, wherein the average pore diameter of the porous film before the treatment is in a range of 0.5 to 10 nm.
5. The method for modifying a porous film according to any one of claims 1 to 4, wherein the organic silicon compound is a cyclic siloxane.
6. A modified porous film obtained by a method as described in any one of claims 1 to 5.
7. A semiconductor material comprising the modified porous film as described in

claim 6.

8. A semiconductor device in which the semiconductor material as described in claim 7 is used.